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Preface

This volume contains six contributions concerning games programming. Key concepts are drawn from well-established disciplines such as artificial intelligence, robotics and graphics, but the focus of these contributions is on games design, or more specifically, on the interplay between games programming and games design. Games design requires close collaboration between authors who design the story board, artists who design the graphics or compose the music, and programmers, who should devise the programs according to the wishes of the mentioned parties. Needless to say, the communication between authors, artists and programmers is time-consuming and error prone. It also constitutes a key component in the development costs of new games, which may involve amounts comparable of those for making films.

Three of the contributions in this volume are aimed at reducing the need for tailor-made games programming, thereby enhancing the efficiency in the design process. Moreno Ger and colleagues show how the use of the XML mark-up language for the story board may result in a clear separation of document structure and processing and in a more rational separation of roles in the development process. Cutumisu and co-authors introduce ScriptEase: a tool for game scripting, enabling a game author to create a high-level description of a game scenario, adapt it to particular circumstances, and then generate the scripting code by pushing a button. Ponsen, Spronck, Munoz-Avila and Aha show how an evolutionary algorithm inspired by reinforcement learning approaches can acquire sufficient domain knowledge to improve the behaviour of non-player actors in a real time strategy game. Dynamic scripting performs best, however, if the encoding process is fully automated.

Two contributions open new venues in games research. Roden, Parberry and Ducrest describe a framework and methodology for authoring interactive, narrative based audio-only games set in 3D environments. Their approach is based on several years of research into audio-only applications for sight impaired users, augmented reality systems and human–computer interaction studies. Nieuwenhuisen, Kamphuis and Overmars stress the relevance of robotics for navigating in games. The existing practice of planning the motion of entities through scripting, grid-search, flocking, and local reactive methods should be supplemented by a path finding method based on Voronoi diagrams. This technique has been successfully applied in robotics and it guarantees a collision-free, smooth movement of entities.

Heule and Rothkrantz deal with the solvability of games with two players possessing full information, such as chess, checkers and go. They show on the basis of examples that the solvability of these games does not depend on general characteristics, such as state-space or game-tree complexity, but on the occurrence of specific characteristics, such as convergent end games, equivalent positions, local end games and sudden death threats. They show that considerations drawn from games theory may prove of practical value too.

I would like to thank the contributors, the referees and the managing editor for the effort they put in this volume. One last remark: it has been exceedingly difficult to bring these contributions together. It is true that other journals exist which publish on games design and games technology, but none exist with a focus on games programming. This seems to indicate that expert knowledge is either guarded through trade secrets, or promoted through other media, such as bulletin board clippings. This may well prove to be detrimental to the solidity of much research currently taking place in this area. Science can only exist by virtue of free exchange, and also the critical investigation of concepts and ideas.

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